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IMPACT OF A TRAINING ON NURSES' KNOWLEDGE, ATTITUDES, AND PERFORMANCE TOWARDS APPLYING ISBAR IN NURSING ACTIVITIES AT EMERGENCY AND INTENSIVE CARE DEPARTMENT, HANOI MEDICAL UNIVERSITY HOSPITAL

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ABSTRACT

Introduction: Effective and well-structured communication among nurses is fundamental to providing high-quality care and ensuring patient safety. Implementing a standardized communication framework helps promote clarity, completeness, and consistency in nursing handovers.

Objective: This study aimed to assess the impact of training on nurses' knowledge, attitudes, and performance in applying ISBAR in nursing activities in the Emergency and Intensive Care Department at Hanoi Medical University Hospital.

Methods: A prospective, descriptive study design was conducted with 45 staff nurses working in the Emergency and Intensive Care Department. Data were collected using a Knowledge-Attitude assessment questionnaire and an observational checklist. Statistical analysis was carried out using SPSS, applying descriptive statistics, the McNemar test, and the Wilcoxon signed-rank test to compare pre- and post-test results. The participants were between 24 and 45 years of age, with females accounting for 68.9% of the sample. After the ISBAR training, the mean knowledge scores increased significantly across all four items: situation, background, assessment, and recommendations (from 13.3 ± 2.7 to 14.6 ± 2.1, $p < 0.05$). Nurses' attitudes toward ISBAR showed a positive shift, but it was not statistically significant. The ISBAR training improved overall communication performance, but its influence was inconsistent across various elements of communication performance.

Conclusion: Applying the ISBAR framework during handover improved nurses' knowledge, attitudes, and communication performance during shift changes.

Keywords: ISBAR, SBAR, nurses, handover, knowledge, attitude, performance.

1. INTRODUCTION

Communication within healthcare settings plays a vital role in maintaining both the quality of patient care and patient safety. It is crucial for nurses, as they represent the most significant proportion of healthcare professionals and spend the most time in direct patient contact. Their responsibilities extend to all hospital activities, from patient admission to discharge, including patient assessment, care planning, implementation, evaluation, health education, communication, and coordination of care. Effective communication underpins all of these activities and enables collaboration among members of the healthcare team. Conversely, communication failures have been recognized as a major contributor to adverse events in clinical practice. According to The Joint Commission, nearly 70% of medical errors can be traced to communication failures [1]. Therefore, accurate and structured nursing communication is essential to

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delivering high–quality nursing care and safeguarding patients [2]. The ISBAR framework (Identification, Situation, Background, Assessment, and Recommendation) is a standardized communication tool developed to ensure clarity, completeness, and systematic nursing handover [3]. The Emergency Department (ED) and Intensive Care Unit (ICU) are frequently cited as the most challenging hospital environments for communication, given the fast, complex, and unpredictable nature of care delivery [3]. However, the Emergency and Intensive Care Department at Hanoi Medical University has not yet applied the ISBAR communication tool in the handover process, nor has it developed a specific ISBAR training for nurses. As a result, this study aims to evaluate the impact of training on nurses' knowledge, attitudes, and performance in applying ISBAR in nursing activities in the Emergency and Intensive Care Department at Hanoi Medical University Hospital.

2. SUBJECTS AND METHOD

2.1. Study subjects

- Registered nurses who work at the Emergency and Intensive Care Department, Hanoi Medical University Hospital, were recruited into this study.

- Participants were eligible if they were registered nurses with a hospital contract and presented at the Emergency and Intensive Care Department during the period of data collection, and voluntarily agreed to participate in the study.

- Nurses were excluded if they declined to participate or were absent during data collection.

2.2. Study method

- Study design: A prospective, descriptive study design was used to evaluate the impact of the training program

- Location and time of the study: Emergency and Intensive Care Department, Hanoi Medical University Hospital, from June 2024 to June 2025

- Sampling and sample size: A total of 45 nurses were included. They were selected from the list of staff directly involved in patient care and who met the inclusion and exclusion criteria. The entire sample was used to assess knowledge and attitudes. Convenient sampling was used to observe nurses' performance.

- Data collection tools: In this study, a knowledge – attitude questionnaire and an observation checklist were utilized in data collection. We used a self-assessment questionnaire, KA-SBAR, which was developed by Wang et al.[1] and validated for reliability and validity by Cooper and Clark[4]. It comprised two subscales: knowledge (4 items; score range 4–20) and attitude (8 items; score range 8–40), measured on a 5-point Likert scale. The original English version of the KA-SBAR was translated into Vietnamese by Quyen NTK et al [5]. An observation checklist based on the ISBAR template introduced in training was used, including 19 items grouped into five sections: Identification (4), Situation (2), Background (6), Assessment (6), and Recommendation (1).

- Data collection methods: A pre-test survey was administered before the training, followed by a post-test survey immediately after, which excluded demographic items but retained all assessment questions. Both questionnaires were distributed and collected by the researcher, who clarified any unclear items without giving hints or examples. In addition, direct observation of nurses' ISBAR handover performance was conducted before and after the training using a structured checklist to evaluate the completeness of information transfer during clinical handover.

- Data analysis: Data were entered into Microsoft Excel and exported to SPSS for screening and analysis. Descriptive statistics (frequency, percentage, minimum, maximum, mean, and standard deviation) were used to describe participants' demographic characteristics, knowledge, attitudes, and performance. Comparisons between pre- and post-test results were performed using the McNemar test for paired categorical variables and the Wilcoxon signed-rank test for continuous variables. Statistical significance was set at $p < 0.05$.

- Ethical consideration

The study was conducted following approval from the Institutional Review Board. All participants were fully informed about the study's purpose and procedures. Participation was voluntary, and participants had the right to refuse or withdraw at any time without any consequences.

3. RESULTS

3.1. Subjects' demographic characteristics

A total of 45 nurses working in the Emergency and Intensive Care Department at Hanoi Medical University Hospital were recruited for the study. The demographic characteristics of the samples are presented in detail in the tables below, including age, gender, education level, clinical experiences, and previous ISBAR training status. Participants' ages ranged from 24 to 45 years, with a mean of 30.2 ± 4.9 years. The largest group was those under 30 years old (55.6%, n = 25). Female nurses accounted for 68.9% (n = 31), nearly twice the number of males. Almost half of the participants had less than 5 years of work experience (48.9%, n = 22), the most significant proportion. Regarding education, most nurses held a university degree (66.7%, n = 30). Slightly more than half (51.1%, n = 23) had received ISBAR training, while 48.9% (n = 22) had not. (Table 1)

Table 1. Subjects' demographic characteristics

Variables		Frequency (n)	Percentage (%)
Age	<30	25	55.6
	≥ 30	20	44.4
Mean ± SD (30.2 ± 4.9)			

Variables		Frequency (n)	Percentage (%)
Gender	Female	31	68.9
	Male	14	31.1
Educational level	Colleges	12	26.7
	University	30	66.7
	Post-graduate	3	6.7

Variables		Frequency (n)	Percentage (%)
Clinical experiences	< 10 years	33	73.3
	≥ 10 years	12	26.7
Mean ± SD (6.1± 4.6)			
Previous IS-BAR training	Yes	23	51.1
	No	22	48.9

3.2. Comparison of knowledge, attitudes, and performances before and after training

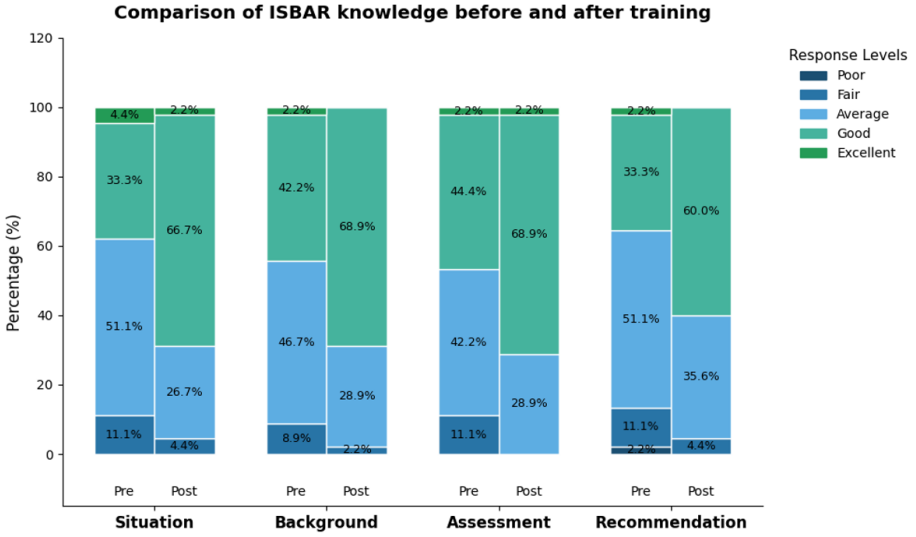

Figure 1. Comparison of ISBAR knowledge before and after training among nurses

After the training, nurses' attitudes toward applying ISBAR improved, with mean scores increasing from 32.7 ± 4.6 to 33.8 ± 3.4. The proportion of nurses agreeing or strongly agreeing that "Using ISBAR will help me to improve communication skills in interactions with other healthcare providers" increased from 84.4% to 95.5%. Similarly, agreement with "Using ISBAR will help me to improve communication with physicians and other primary care providers" rose from 84.4% to 97.8%. This upward trend was also observed across other statements, including "Using ISBAR will increase my critical thinking skills during patient encounters" (86.7% to 95.5%), "Using ISBAR to communicate is an efficient use of my time" (75.6% to 88.9%), "ISBAR applies to my clinical practice" (86.6% to 95.5%), "ISBAR is easy to practice" (75.5% to 88.9%), and "I will use ISBAR during my clinical practice" (86.7% to 97.8%). (Figure 2)

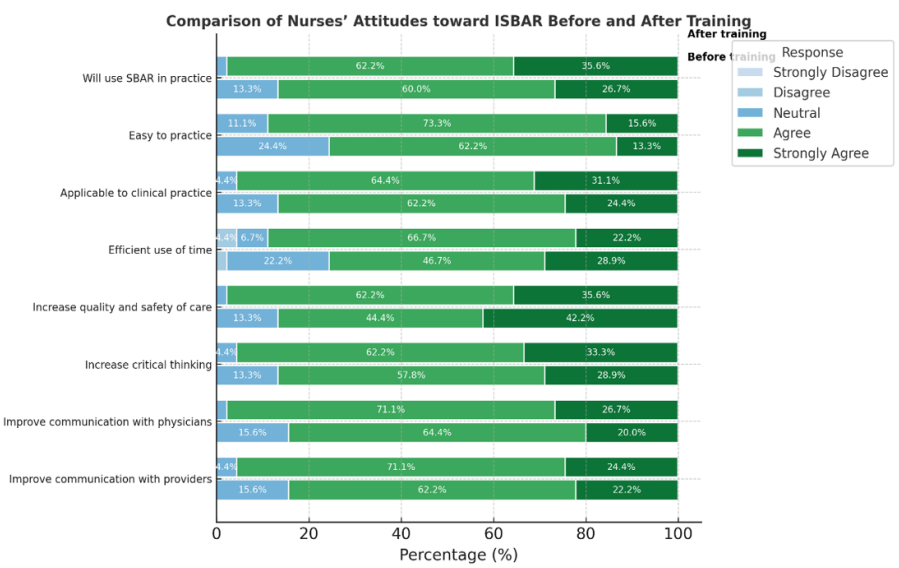

Figure 2. Comparison of nurses' attitudes toward ISBAR before and after training

Regarding nurses' practice in patient handover, several changes were observed after the ISBAR training. Regarding patient identification, all nurses consistently reported patients' names and ages (100%), indicating strong adherence to basic identification standards, although gender, ID, and allergy information were entirely omitted. For the Situation and Background components, nearly all nurses stated the patient's diagnosis (93.3%-100%), but details such as the reason for admission and past medical or surgical history were inconsistently reported (33–42%). A significant improvement was seen in the Assessment component, particularly in reporting recent patient changes (ABCDE, procedures, interventions) from 44.4% to 71.1% (p = 0.012). However, increases in neurological and urinary assessments were not statistically significant, and some areas—such as medical history, medication use, and cardiovascular or mental health assessments—slightly declined. In the Recommendation component, a modest, non-significant improvement was observed (77.8% → 82.2%, p = 0.774). (Figure 3)

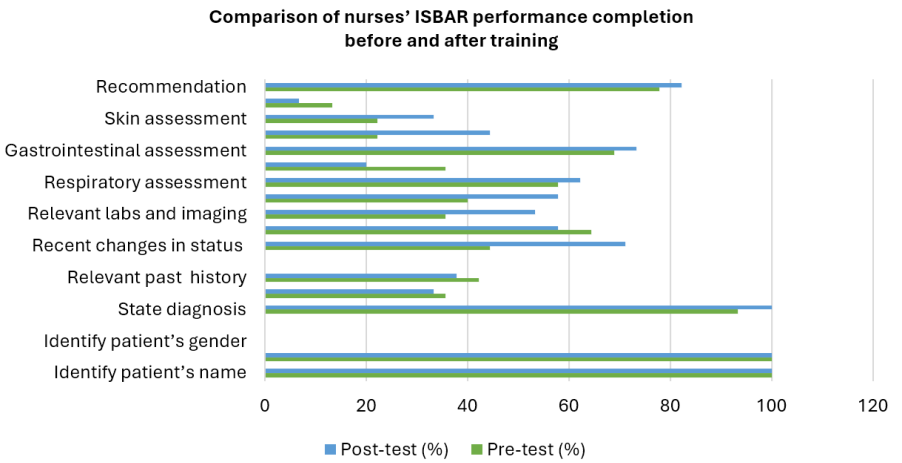

Figure 3. Comparison of nurses' ISBAR performance completion before and after training

4. DISCUSSION

The present study demonstrated that ISBAR training significantly improved nurses' knowledge. The total knowledge score increased from 13.3 ± 2.7 to 14.6 ± 2.1 (p = 0.001), with significant gains observed across all four domains: situation (3.3 → 3.7, p = 0.003), background (3.4 → 3.7, p = 0.007), assessment (3.4 → 3.7, p = 0.001), and recommendation (3.2 → 3.6, p = 0.007). These findings confirm that the structured ISBAR training program effectively enhanced nurses' understanding of the key elements of standardized handover communication. After training, the proportion of nurses achieving a good level of knowledge increased markedly across all domains: from 33.3% to 66.7% for situation, from 42.2% to 68.9% for background, from 44.4% to 68.9% for assessment, and from 33.3% to 66.0% for recommendation. At the same time, the proportion of nurses with only average knowledge decreased notably, and none continued to rate themselves as poor in any domain after training. Nevertheless, the proportion achieving an excellent level of knowledge remained very small. These findings align with previous studies by Elsayed (2013), which demonstrated significant improvement in total knowledge score after the intervention (4.8% to 92.8%, p < 0.01), and Jeong and Kim (2020), who reported that 75% nurses improved their knowledge after the ISBAR simulation training [6, 7]. Similarly, studies conducted by Wang et al. (2015) found a significant improvement in participants' knowledge of all ISBAR elements, with the total mean score rising from 14 ± 2.5 to 16.56 ± 2.22, p < 0.01 [1]. Cooper and Clark (2020) also showed a higher ISBAR knowledge score after training (14 ± 3.25 to 16.83 ± 2.14) [4]. The results confirm that structured communication training effectively enhances nurses' understanding of ISBAR, which is crucial for accurate and comprehensive patient handovers. Improved knowledge not only strengthens communication clarity but also contributes to patient safety by minimizing errors related to information transfer. Enhanced understanding of the ISBAR framework enables nurses to provide more accurate, concise, and complete information during handovers, reducing the likelihood of information loss, miscommunication, or clinical errors. Nonetheless, the limited number of nurses attaining excellent scores highlights the need for continuous reinforcement and supervision to sustain proficiency and ensure long-term benefits. This result suggested that ongoing ISBAR training sessions, supervision, and reinforcement for nurses are essential to ensure proficiency and long-term patient safety benefits.

Refer to nurses' attitude, although attitude scores showed only slight, non-significant improvement after training (32.7 ± 4.6 → 33.8 ± 3.4, p > 0.05), positive changes were evident across all items. Regarding communication, agreement with "Using ISBAR will help me improve communication with other healthcare providers" rose from 84.4% to 95.5%, and with physicians from 84.4% to 97.8%, reflecting stronger interprofessional collaboration. These findings are

consistent with those of Kim et al. (2018), who found that nurses perceived significant improvement in communication between nurses and doctors after ISBAR training. A similar result was reported by Nguyen Thi Kim Quyen (2020), where 76.5% nurses found that structured communication improves collaboration between nurses and physicians [5]. For critical thinking, 95.5% of nurses agreed that ISBAR enhances clinical reasoning and prioritization, consistent with findings by Yun and Kang (2023) and Shahid and Thomas (2018), who reported that ISBAR-based simulation training may enhance nursing critical thinking in clinical settings [8, 9]. Perceptions of ISBAR's impact on patient safety also improved (86.6% → 97.8%), highlighting nurses' recognition of the link between communication and patient safety. This finding is supported by Müller et al. (2018) and Lee and Noh (2019), who found that structured handover significantly reduces clinical errors and improves patient [2]. Efficiency perception increased (75.6% → 88.9%), and more nurses found SBAR applicable and easy to use in daily practice. Similarly, attitudes toward the statements "ISBAR applies to my clinical practice" and "ISBAR is easy to practice" showed modest improvement, indicating that nurses perceived the tool as both feasible and adaptable to their local workflows. This finding is particularly significant in busy emergency and intensive care settings, where concise and standardized communication is essential. Finally, agreement with "I will use ISBAR during my clinical practice" rose from 86.7% to 97.8%, indicating a strong commitment to consistent ISBAR use—a key factor in maintaining long-term improvements in handover quality. Although the positive trend suggests that the training may have influenced nurses' perceptions, the differences were not statistically significant. This may be attributed to the already high baseline attitudes, the small sample size, or the fact that behavioral change typically requires ongoing practice and reinforcement.

Following the improvements in knowledge and attitude, nurses' performance during actual handovers also showed positive trends, indicating that cognitive and attitudinal gains were partially translated into behavioral change. For patient identification, all nurses consistently reported patients' names and ages (100%), reflecting strong adherence to basic standards, although gender, ID, and allergy information were entirely omitted. Similar gaps were observed in Vietnamese studies by Huynh Thi Kieu Diem (2019) and Nguyen Thi Kim Quyen (2021), in which only 63–67% of nurses performed complete identification [5, 10]. The absence of allergy information remains a critical safety concern, as also highlighted by Müller et al. (2018)[3]. In the Situation and Background domains, nearly all nurses reported diagnoses (93.3%-100%), but details such as reasons for admission and past medical or surgical history were inconsistently provided (33–42%). This may relate to nurses' familiarity with long-stay ICU patients, leading to unintentional omissions—a trend also noted by Kim et al. (2018), who found that nurses prioritized urgent clinical problems over background details [11]. The Assessment component showed the most improvement, especially in reporting recent patient changes (44.4% → 71.1%, p = 0.012), demonstrating ISBAR's effectiveness in enhancing critical reporting. However, neurological and urinary assessments improved without statistical significance, and some areas—such as medical history, medications, and cardiovascular or mental assessments—declined slightly, suggesting that nurses focused more on the ISBAR structure than content completeness. Another possible reason for these findings is that the framework was adopted, but not yet fully incorporated within their clinical process. In the Recommendation domain, a modest improvement was observed (77.8% → 82.2%, p = 0.774), reflecting increased confidence in providing clinical suggestions. This aligns with Huynh Thi Kieu Diem (2019), who found that structured communication training encouraged greater nurse participation in team discussions[10]. Overall, the results show that the ISBAR training had a positive but uneven effect across different components of communication performance. These findings suggest that short-term training alone is insufficient; instead, ongoing education, clinical mentoring, and integration of ISBAR into hospital policies are essential to sustain behavioral change and enhance communication consistency.

Limitations

This study has several limitations that should be acknowledged. First, the sample size was relatively small (n = 45), which may limit the generalizability of the findings. Second, the evaluation was conducted at a single time point after training, without a follow-up assessment to determine long-term retention of knowledge, attitudes, and performance. Third, the observation checklist used to assess nurses' handover practice was developed from training materials rather than from a validated or standardized instrument, which may affect the objectivity and comparability of the results. Future studies with larger samples, longitudinal follow-up, and the use of standardized evaluation tools are recommended to provide more evidence on the effectiveness of ISBAR training.

5. CONCLUSION

After the ISBAR training, nurses' knowledge scores increased significantly across all components ($p < 0.05$). Attitude scores showed a generally positive trend but did not reach statistical significance. In terms of performance, the training produced positive yet uneven improvements across different elements of handover communication.

6. RECOMMENDATION

Based on the study findings, several recommendations are proposed. For nursing management, ISBAR training

should be incorporated into the hospital's annual continuing education programs to maintain effective communication among nurses. Developing an electronic ISBAR handover template and establishing a monitoring and feedback system are also recommended to ensure standardized and consistent practice. For future research, longitudinal studies should be conducted to evaluate the long-term effectiveness of ISBAR implementation. Further studies should also identify barriers and facilitators to its consistent use and include larger, more diverse samples across multiple departments or hospitals to improve generalizability.

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